**THE DEPARTMENT OF ENERGY'S BUDGET REQUEST FOR FY 2001**

Hearing of the Subcommittee on Military Procurement
Committee on Armed Services
U.S. House of Representatives

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Mr. Chairman and members of the Committee, thank you for the opportunity to provide a statement to the Committee concerning the Department of Energy's FY 2001 Budget Request. Lawrence Livermore National Laboratory was founded in 1952 as a nuclear weapons laboratory, and national security continues to be our central mission. Livermore is committed to maintaining confidence in the U.S. nuclear weapons stockpile as a principal participant in the Department of Energy's Stockpile Stewardship Program. Livermore also contributes to vital national programs to stem and counter the proliferation of weapons of mass destruction.

The maintenance of a safe and reliable stockpile is a supreme national interest of the United States. In 1995, the Stockpile Stewardship Program was launched to significantly improve over a decade the science and technology base for making informed decisions about an aging stockpile without relying on nuclear testing. We are nearing the midpoint of that ten-year period. There has been much progress, but much remains to be accomplished.

Two fundamental premises underlie the Stockpile Stewardship Program. First, we must be able to develop a sufficiently detailed understanding of the science and technology that governs all aspects of nuclear weapons. By sufficiently detailed, I mean that future stockpile stewards must be able to certify the performance of U.S. nuclear weapons with confidence. They must be able to remanufacture parts and refurbish weapons as needed and deal with whatever issues arise using a set of computational and experimental tools that does not include nuclear explosive tests. Second, we must proceed expeditiously so that we have the necessary tools and scientific understanding in place within about a decade. It is a race against time. Before long our nuclear-test veterans will be gone. Our current cadre of experienced scientists are needed to develop and install the new tools that only now are starting to come on-line, and they are training and evaluating the skills of their successors.

Last October, DOE Secretary Richardson called for a 30-day comprehensive internal review of the Stockpile Stewardship Program. It examined accomplishments and program structure to ensure that current and long-term needs for certifying the stockpile can be met. The "30-Day Review" found that the program "structure is on track" and that "science-based stockpile stewardship is the right path." This review and Secretary Richardson's accompanying strong endorsement of the program reinforces my confidence that we can deliver on our commitment to maintain the nation's deterrent without testing.

The "30-Day Review" of the Stockpile Stewardship Program cites a number of important accomplishments. Several recent ones entail activities at our Laboratory. We brought on line the IBM Blue Pacific 3.9-teraops (trillion operations per second) supercomputer and we conducted the first-ever three-dimensional simulation of a nuclear primary explosion, which is an important program milestone. We also achieved significant successes in our subcritical experiments at the Nevada Test Site to better understand the properties of plutonium. In addition, our W87 ICBM warhead Life Extension Program has met all of its goals, including deployment of refurbished units on alert by the Air Force.

One important finding of the review was that "despite the many accomplishments, the program is under stress." The program's ambitious goals include having in place within about a decade a set of vastly improved scientific tools and manufacturing capabilities: 100-teraops supercomputers; advanced radiography capabilities to take three-dimensional images of imploding mock primaries; a high-energy-density research facility, the National Ignition Facility, to study the thermonuclear physics of primaries and secondaries; and efficient, flexible, and modern manufacturing facilities. Concurrently, there have been greater than anticipated needs for direct stockpile support to meet Department of Defense requirements, and investments are needed to meet new security requirements. There are extraordinary demands on program resources, which are affecting our rate of progress in many areas. The pace of progress must be quickened.

At Livermore, we are especially challenged in one key area: National Ignition Facility (NIF) construction. We are committed to all actions necessary to ensure the success of NIF, which is a cornerstone and essential element of the Stockpile Stewardship Program. The underlying science and technology of this extraordinarily large and complex project are sound; however, assembly of the laser will be much more complicated than initially expected. There are no technical show stoppers, but the project will take longer and cost more than initially planned. Project status has been reviewed in detail with the Laser System Task Force of the Secretary of Energy Advisory Board. They concluded in their Interim Report that "…with appropriate corrective actions, a strong management team, additional funds, an extension of schedule and recognition that NIF is, at its core, a research and development project, the NIF laser can be completed." In September, we instated a new project management team at Livermore, and they are developing a rebaselined NIF project plan for the Secretary by May 2000. It is vital that momentum not be lost on the rebaselined project, which will happen if FY 2001 funding is inadequate to support the option selected. The Department of Energy is considering a range of options for the NIF based on information we have submitted and will provide a recommendation to the Committee in the near future.

In addition to NIF issues, we are also concerned about other areas of program stress. The Accelerated Strategic Computing Initiative (ASCI) is on track at Livermore in the near-term, with the 10-teraops Option White to be delivered in summer 2000; however, the schedule for construction of the Terascale Simulation Facility and acquisition of a third-generation ASCI supercomputer for Livermore will slip under the current budget request. While the Dual-Axis Radiographic Hydrodynamic Test (DARHT) facility at Los Alamos remains on schedule, the schedule to provide three-dimensional radiographic capability is uncertain. In addition, the production plants have modernization needs. We are also proceeding expeditiously with a number of physical and cyber security upgrades that are drawing funding away from programmatic work. And, as noted in the "30-Day Review"

findings, morale and employee recruitment and retention are being impacted by new security requirements (e.g., restrictions on foreign nationals), budget uncertainty, and reduction of resources to support innovative scientific inquiry.

The greatest challenges still lie ahead. While available resources are significantly constrained, the demands on the Stockpile Stewardship Program will continue to grow as weapons in the enduring stockpile continue to age. The U.S. nuclear weapons stockpile is older on average than it has ever been. The reservoir of nuclear test and design experience at the laboratories continues to diminish. Program success depends on bringing into operation scientific capabilities such as ASCI and NIF while there remain experienced nuclear designers to train the next generation of stockpile stewards. Maintenance of a safe and reliable nuclear weapons stockpile requires sustained support for the program from Congress and the Administration. The program has greatly benefited from Congressional support to date. I urge your strong support of the FY 2001 Budget. Additional support in FY 2001 would help relieve a number of stresses that are arising as the program matures.

I also urge your vigorous support for the program proposed by the Office of Defense Nuclear Nonproliferation and for the programs and initiatives of other agencies in the area of weapons of mass destruction (WMD) nonproliferation and counterterrorism. Livermore's national security responsibilities extend beyond stewardship of the U.S. stockpile. The proliferation of nuclear, chemical, and biological weapons (collectively known as weapons of mass destruction) is a serious threat to national security. A multi-pronged approach is needed to protect against and counter the threat. Through a spectrum of activities, the DOE and its national security laboratories are supporting U.S. arms control and nonproliferation policy, analyzing weapons activities worldwide, and providing improved capabilities to thwart WMD threats.

Livermore, in particular, is making significant progress in technologies to secure weapons-usable fissile materials, to detect proliferation-related activities, and to combat WMD terrorism. For example, we recently completed and commissioned Material Protection, Control and Accounting (MPC&A) upgrades on two of the Russian nuclear navy's refueling ships. These upgrades significantly improve the security of the fresh nuclear fuel stored on these vessels. We are completing key milestones for the regional seismic database for North Africa and the Middle East, an essential element of the nation's ability to detect and identify low-yield nuclear tests anywhere in the world. This past year, we also successfully flight-tested several remote sensing technologies for detecting chemical effluents indicative of WMD proliferation activities and demonstrated the applicability of one of these technologies to post-intercept ballistic missile assessment. We continue to make breakthroughs in portable biodetection instrumentation, including a battery-powered handheld instrument capable of DNA analysis in minutes. To implement these programs efficiently while providing the upgraded security needed for protecting these activities, a facility has been proposed at Livermore where the International Assessments Program and related activities will reside. We strongly urge your support for this Sensitive Compartmented Information Facility (SCIF) and for enhancement of these vital programs.

Finally, I must mention that 1999 was a very stressful year with the considerable national attention focused on security at the DOE national laboratories. During the course of the year, we took strong positive action on security and counterintelligence issues. We

have made substantial progress in many areas. In particular, we have worked expeditiously to address all issues that arose in self-evaluations or resulted from the May 1999 inspection by the DOE Office of Security Evaluations (OSE). As an outgrowth of these efforts, we received an overall Satisfactory (Green) rating from DOE/OSE in their Follow-up Inspection in December 1999. Now, we need to regain momentum in our programmatic national security activities and take steps to ensure that we are able to attract and retain the outstanding workforce we need in order to continue to fulfill our national security mission. The Laboratory's future prospects would greatly benefit from a strong reaffirmation by national leaders that they highly value our efforts and that they are fully committed to providing the resources and cutting-edge research capabilities needed to succeed.

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